

REMARKS

The present amendments and remarks are in response to the Office Action of November 17, 2005. Claims 1-11 and 42-52 are currently pending. Claims 12-41 have previously been withdrawn.

Reconsideration of the application is respectfully requested in view of the following responsive remarks. For the Examiner's convenience and reference, the Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

In the Office Action, claims 1-11 and 42-52 were rejected under 35 U.S.C. 103(a) as obvious over U.S. Application No. 2001/0050031 (hereinafter "Bredt") alone or in view of U.S. Patent No. 6,165,406 (hereinafter "Jang"), and or U.S. Patent No. 6,238,474 (hereinafter "Unsin").

It is respectfully requested that the presently pending claims be examined and allowed. Applicants submit that each and every amendment herein, and throughout the prosecution of the present application is fully supported by the specification as originally filed, and that no new matter has been added.

Rejections under 103(a)

Before discussing the obviousness rejection herein, it is thought proper to briefly state what is required to sustain such a rejection. The issue under § 103 is whether the PTO has stated a case of *prima facie* obviousness. According to the MPEP § 2142, the Examiner has the burden and must establish a case of *prima facie* obviousness by showing some motivation in a prior art reference to modify that reference, or combine that reference with multiple references, to teach all the claim limitations in the instant application. Applicant respectfully asserts the Examiner has not satisfied the requirement for establishing a case of *prima facie* obviousness in this rejection.

Rejections over Bredt

The Examiner has rejected claims 1-11 and 42-52 as obvious over Bredt alone, in view of Jang, or in view of Unsin. Particularly, the Examiner has claimed that Bredt teaches "a method of making a three dimensional object by mixing calcium

aluminate...and a printing aid such as polyethylene glycol....” However, Applicant previously submitted, and continues to assert, that that the Examiner has not taken into account properly the type of claim being considered. The Applicant is not only claiming the ingredient combination *per se* (as might be the case in a composition claim), but rather, the Applicant is claiming a method for solid free-form fabrication of a three-dimensional object utilizing the ingredients claimed. As the Examiner is well aware, when evaluating method claims, the steps of the method claim are paramount to the patentability of the claims. Accordingly, Applicant re-asserts the previous argument from the prior Office Action Responses, and further clarifies herein the patentable aspects of the presently claimed application with emphasis on the current claim amendments.

Bredt teaches a process where a printing aid (such as polyethylene glycol) is pre-mixed in a filler (such as calcium aluminate) prior to printing. If it is mixed prior to printing, it must follow that the printing aid is not added by a printing process. In contrast, the currently amended method proposed by Applicant requires the aqueous polyol-containing liquid vehicle be ink-jetted onto a particulate blend. As the Examiner is citing polyethylene glycol as the polyol that corresponds to the Applicant’s polyol, and as the polyethylene glycol is not added to the filler in Bredt by a printing process, Bredt does not include all of the claim limitations of the presently claimed invention. Further, as Bredt clearly does not teach of ink-jetting a polyol, in order to sustain a rejection under 35 U.S.C. 103(a), Bredt must include a suggestion to make such a modification to arrive at the claimed invention. Such a suggestion is not present in Bredt, and further, Bredt actually teaches away from the currently claimed invention. In other words, because Bredt requires pre-mixing of the filler and printing aid materials prior to printing, Bredt specifically teaches away from applying a printing aid using a printing step.

To reiterate and clarify a previous submission and to update the response in accordance with the presently pending claims, it is notable that Bredt describes printing aids as materials that are added to the powder material (i.e. filler) before printing in order to provide light adhesion between the powder grains, thereby reducing dust formation, [See Paragraph 0056]. The Bredt reference is devoid of teaching that the printing aid can be ink-jetted onto the filler material. There, as mentioned, the printing aid is admixed with the powder material in preparation for a subsequent printing step.

In contrast, the presently claimed invention provides several specific steps for solid free-form fabrication of three-dimensional objects. The steps provided are: a) applying a particulate blend in a layer, where the particulate blend can include calcium aluminate particulates and polymeric binder particulates; b) ink-jetting an aqueous polyol-containing liquid vehicle onto an area of the particulate blend to form hydrated cement in the area, wherein the hydrated cement becomes crosslinked; c) hardening the hydrated cement; and d) repeating steps a) through c) such that multiple layers of the cement are formed that are bound to one another, thereby forming the three dimensional object. Thus, the ink-jetting step of the claimed invention should be more appropriately paralleled to the “printing” step of Bredt, not to the step where printing aids are merely added in preparation for printing. As the poly-containing liquid is ink-jetted onto the particulate blend and not mixed in with the blend prior to printing as described in Bredt, Bredt lacks the teaching or the motivation that process can be modified to create a three dimensional object. Failure to provide such a teaching or suggestion to arrive at the claimed invention renders the presently claimed invention non-obvious in view of Bredt. Accordingly, Applicant respectfully requests reconsideration of the claims in view of the aforementioned arguments, and withdrawal of such rejections is respectfully requested.

Rejections over Bredt in view of Jang and Unsin

The Examiner has also rejected the same claims over Bredt in view of Jang, and or in view of Unsin. Once again, Applicant submits that none of these references cure the defect presented by Bredt, in that none teach ink-jetting an aqueous polyol-containing liquid vehicle onto an area of a particulate blend to form hydrated cement in the area, either alone or in any of the noted combinations. Thus, these secondary references do not seem to be particularly relevant in light of the current amendments and with respect to the maintaining of a *prima facie* case of obviousness. It is recognized that these secondary references have been cited primarily because of the purported relevance to certain dependent claims. However, as the independent claims are patentable over Bredt, it is believed that these rejections have been rendered moot. For further discussion on Jang and Unsin, Applicant respectfully refers to previous responses, particularly the response to the Final Office Action of June 8, 2005.

Accordingly, Applicant respectfully requests reconsideration of the claims in view of the aforementioned arguments, and withdrawal of such rejections is respectfully requested.

CONCLUSION

In light of the above discussion, Applicant believes that claims 1-11 and 42-52 present allowable subject matter and allowance is respectfully requested.

If any impediment to the allowance of these claims remains, and such impediment could be resolved during a telephone interview, the Examiner is invited to telephone the assignee's counsel, W. Bradley Haymond at (541) 715-0159, so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025.

Dated this 17 day of February, 2006.

Respectfully submitted,



Gary P. Oakeson
Attorney for Applicant
Registration No. 44,266

Of:

THORPE NORTH & WESTERN, LLP
8180 South 700 East, Suite 200
Sandy, Utah 84070
(801) 566-6633

On Behalf Of:

HEWLETT-PACKARD COMPANY
1000 NE Circle Blvd., m/s 422B
Corvallis, OR 97330-4239
(541) 715-0159